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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,594	06/09/2006	Jens Beier	WUE-52	1983
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Thomas J Burger Wood Herron & Evans 2700 Carew Tower 441 Vine Street Cincinnati, OH 45202-2917		EXAMINER OREILLY, PATRICK F		
		ART UNIT 3749		PAPER NUMBER
		MAIL DATE 08/06/2008		DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/582,594

**Applicant(s)**

BEIER ET AL.

**Examiner**

Patrick F. O'Reilly III

**Art Unit**

3749

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 2-11 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 09 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date 6/9/2006; 2/15/2008  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Copies of the certified copies of the priority documents have been received in this National Stage application.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on February 15, 2008 is acknowledged. The submission is in compliance with the provisions of 37 C.F.R. § 1.97 and 37 CFR § 1.98 and, therefore, the references therein have been considered.

3. The information disclosure statement filed June 9, 2006 fails to comply with 37 CFR 1.98(a)(3) because it does not include an English translation or a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information of the following document, which is not in the English language: Lufthansa Report 0476 (published in German). It has been placed in the application file, but the information referred to in the Lufthansa Report has not been considered.

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “the mixing of the hot air with the cold ambient air” recited in claim 9 and the “control means” recited in claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. The abstract of the disclosure is objected to because the word “(Figure)”, which is included at the end of the abstract, is superfluous and therefore, should be deleted. Correction is required. See MPEP § 608.01(b).

7. The disclosure is objected to because of the following informalities:

The specification fails to include any section headings, such as: “Background of the Invention”, “Brief Summary of the Invention”, “Brief Description of the Drawing(s)”, and “Detailed Description of the Invention”.

On page 1 of the specification, in lines 6-7, the references to claims 1 and 9 should be deleted. Similarly, on page 2, in line 11, the reference to claim 1 should be deleted. In general, the specification should not contain specific references to claim numbers because these numbers often change during the course of prosecution, such as, when claims are added or amended.

On page 1 of the specification, in lines 36-37, the applicant should verify that the temperatures listed in the following clause are correct: "...the ambient temperature can be below 50°C or even 60°C...". The temperatures listed are very warm (122°F and 140°F, respectively), and not cold as indicated.

On page 5 of the specification, in line 33, the word "maneuvered" is misspelled "manoeuvred".

Appropriate correction is required.

### ***Claim Objections***

8. Claim 3 is objected to because of the following informality: in line 2 of this claim, the word "in" should be inserted immediately before the phrase "the event of a failure". Appropriate correction is required.

9. Claim 5 is objected to because of the following informality: in line 2 of this claim, reference is made to "*each* first close off mechanism". Claim 5 depends upon claim 11, but claim 11 only refers to *one* such first close off mechanism. Thus, for the purpose of an examination on the merits, the examiner has considered this as a recitation to "the first close off mechanism", rather than "*each* first close off mechanism" as recited. Appropriate correction is required.

10. Claim 6 is objected to because of the following informality: in line 2 of this claim, reference is made to “*each* second close off mechanism”. Claim 6 depends upon claim 11, but claim 11 only refers to *one* such second close off mechanism. Thus, for the purpose of an examination on the merits, the examiner has considered this as a recitation to “the second close off mechanism”, rather than “*each* second close off mechanism” as recited. Appropriate correction is required.

11. Claims 7 and 8 are objected to because of the following informalities: in line 2 of each claim, reference is made to “*each* stop valve”. Claims 7 and 8 both depend directly, and indirectly, upon claim 6, but claim 6 only refers to *one* such stop valve. Thus, for the purpose of an examination on the merits, the examiner has considered each of these occurrences as a recitation to “the stop valve”, rather than “*each* stop valve” as recited. Appropriate correction is required.

12. Claim 9 is objected to because of the following informality: in line 5 of this claim, reference is made to “*the* flow control valve”. However, “the flow control valve” was not referred to previously in this claim. Thus, for the purpose of an examination on the merits, the examiner has considered this as a recitation to “a flow control valve”, rather than “the flow control valve” as recited. Appropriate correction is required.

13. Claim 9 is further objected to because of the following informality: the claim does not contain a recognized transition that permits the determination of whether each claim is intended to be inclusive of additional elements or alternatively, exclusive of additional elements. This claim should be rewritten with either an open-type transition, such as “comprising” or “including”, or a closed-type transition, such as “consisting of”. For the purpose of an

examination on the merits, the examiner has considered claim 9 to be inclusive of additional elements (open-type transitions presumed). Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. **Claims 2-8 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US 6,189,324) in view of Hayes et al. (US 4,149,389). These two references, when considered together, teach all of the elements recited in **claims 2-8 and 11** of this application.

16. In particular, claim 11 of this application is obvious when Williams et al. is viewed in light of Hayes et al. Williams et al. discloses the invention substantially as claimed, including: a first hot air supply line (connected to inlet 52) leading to an air conditioning unit (air cycle cooling circuit 60 – Fig. 1), a flow control valve (electrically operated selector valve 50) disposed in the first hot air supply line (connected to inlet 52) upstream from the air conditioning unit (60 – Fig. 1), and a second hot air supply line (branch line downstream from outlet 58 and connected to cabin 12 via temperature control valve 130) between the flow control valve (50) and the air conditioning unit (60) branching off from the first hot air supply line (connected to inlet 52) and bypassing the air conditioning unit (60), whereby a third hot air supply line (full bleed air line 56) branches off at the flow control valve (50) from the first hot air

supply line (connected to inlet 52), which third hot air supply line (56) connects the first hot air supply line (connected to inlet 52) to the second hot air supply line (downstream of mechanical check valve 136), wherein the second hot air supply line (with check valve 136) downstream of a junction with the third hot air supply line (56) continues to extend in the direction of the aircraft cabin (12 – Fig. 1), and whereby, in the second hot air supply line upstream from the junction with the third hot air supply line (56) a first close off mechanism (mechanical check valve 136) is disposed, which first close off mechanism (136) prevents in its closed position a flow from the second hot air supply line into the first hot air supply line (see col. 7, ln 23-28), and whereby, in the third hot air supply line (56) upstream from the junction with the second hot air supply line (branch line downstream from outlet 58 and connected to cabin 12 via temperature control valve 130) is disposed a second close off mechanism (in the first outlet port 54 of valve 50). Refer to Williams et al., Figure 1; column 3, lines 21-30 and 46-67; column 4, lines 1-10; and column 7, lines 1-28.

Moreover, the functionality of the device disclosed in Williams et al. is identical to that of the present invention, namely controlling the temperature in the aircraft cabin (12) in case of a failure of the air conditioning unit (60). See Williams et al., column 3, lines 63-67 and column 4, lines 1-10. Both the device from Williams et al., as well as that of the present invention, achieve that by shutting down the flow from the first hot air supply line to the air conditioning unit and by directly providing hot air from the first hot air supply line via the third and second hot air supply lines to the cabin (12). Refer to Williams et al., Figure 1.

Although, claim 11 of this application further discloses that the third hot air supply line branches off upstream from the flow control valve in the first hot air supply line. In Williams et



al., the third hot air supply line (56) branches off from the first hot air supply line at flow control valve (50), not upstream from flow control valve (50). See Williams et al., Figure 1. Thus, instead of closing a first two-way valve (i.e., the flow control valve 16 in the present invention), and opening a second two-way valve (i.e., the second close off mechanism 22 in the present invention), the device disclosed in Williams et al. uses a single, three-way selector valve (50) to redirect the hot air flow to the cabin (12) in case of failure. Refer to Williams et al., column 3, lines 63-67 and column 4, lines 1-10.

However, merely substituting two independent, two-way valves for a single three-way selector valve that performs the same function would not make the claimed invention patentably distinct from Williams et al. because it is a well known principle of patent law that the mere substitution of one art-recognized equivalent for another art-recognized equivalent, both of which are known to be used for the same purpose, is *prima facie* obvious. See MPEP § 2144.06(II). In this case, the prior art, namely Hayes et al., teaches that it is known in the heating, ventilating, and air conditioning (HVAC) art to substitute two independent, two-way valves for a single three-way selector valve, wherein both valve arrangements are capable of being used for the same purpose. Refer to Hayes et al., column 4, lines 13-16. Therefore, when Williams et al. is viewed in light of Hayes et al., it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the aircraft heating device of Williams et al. by substituting two independent, two-way valves for the single three-way selector valve, as taught by Hayes et al., because both valve arrangements are capable of redirecting hot air flow to the cabin (12) upon the failure of an air conditioning unit.

17. In regard to claim 2, Williams et al. further discloses that, when the air conditioning unit (air cycle cooling circuit 60 – Fig. 1) is functioning, the first close off mechanism (mechanical check valve 136) assumes its open position and the second close off mechanism (in the first outlet port 54 of valve 50) assumes its closed position. See Williams et al., Figure 1; column 3, lines 58-63; and column 7, lines 23-28. Therefore, Williams et al. in view of Hayes et al. also renders the limitations in this claim obvious.

18. In regard to claim 3, Williams et al. further discloses that, in the event of a failure of the air conditioning unit (air cycle cooling circuit 60 – Fig. 1), the flow control valve (second outlet port 58 of valve 50) and the first close off mechanism (mechanical check valve 136) assume their closed positions and the second close off mechanism (in the first outlet port 54 of valve 50) assumes its open position. Refer to Williams et al., Figure 1; column 3, lines 58-67; column 4, lines 1-10; and column 7, lines 23-28. Consequently, Williams et al. in view of Hayes et al. also renders the limitations in claim 3 obvious.

19. Moreover, claim 4 of this application also is obvious when Williams et al. is viewed in light of Hayes et al. The combined teachings of these two reference render obvious all of the limitations recited in claim 4, except for providing multiple arrangements of the components recited in claim 11 (e.g., providing a plurality of first, second, and third hot air supply lines, a plurality of air conditioning units, and a plurality of flow control valves, first close off mechanisms, and second close off mechanisms). However, the Court of Customs and Patent Appeals has held that the “mere duplication of parts has no patentable significance unless a new and unexpected result is produced”. See MPEP § 2144.04(VI)(B) (quoting *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)). In this application, merely providing multiple

arrangements of the components recited in claim 11 simply facilitates the control of multiple air conditioning zones in the aircraft passenger compartment. One of ordinary skill in the art would expect that a single air conditioning zone may not be able to adequately control the interior climate in large aircraft and that such a limitation could be overcome simply by the addition of multiple air conditioning zones. Consequently, because the ability to provide multiple air conditioning zones is neither a new or unexpected result of utilizing multiple arrangements of the components recited in claim 11, the plurality of components recited in claim 4 of this application has no patentable significance and this claim is properly rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. in view of Hayes et al.

20. In regard to claim 5, Williams et al. further discloses that the first close off mechanism (136) is a non-return valve (a mechanical check valve). See Williams et al., Figure 1 and column 7, lines 23-28. Thus, Williams et al. in view of Hayes et al. also renders the limitations in claim 5 obvious.

21. In regard to claim 6, Williams et al. further discloses that the second close off mechanism (in the first outlet port 54 of valve 50) is a stop valve (during the normal operation of the air conditioning system 60, flow is prevented, i.e., stopped, through the first outlet port 54 of valve 50). Refer to Williams et al., Figure 1 and column 3, lines 58-63. Therefore, Williams et al. in view of Hayes et al. also renders the limitations in this claim obvious.

22. In regard to claim 7, Williams et al. further discloses that the stop valve (in the first outlet port 54 of valve 50) is automatically actuated (selector valve 50 is electrically operated). See Williams et al., column 3, lines 58-63. Consequently, Williams et al. in view of Hayes et al. also renders the limitations in claim 7 obvious.

23. In regard to claim 8, Williams et al. further discloses that the stop valve (in the first outlet port 54 of valve 50) is connected to a control means, in particular to the control means of the associated air conditioning unit (the selector valve 50 is positioned responsive to an electrical output from a control computer 40, which is operatively connected to the air cycle cooling circuit 60). Refer to Williams et al., Figure 1 and column 3, lines 63-67. Thus, Williams et al. in view of Hayes et al. also renders the limitations in claim 8 obvious.

24. **Claims 9-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US 6,189,324) in view of Stubbendorff et al. (US 6,012,515). These two references, when considered together, teach all of the elements recited in **claims 9-10** of this application.

25. In particular, claims 9-10 of this application are obvious when Williams et al. is viewed in light of Stubbendorff et al. Williams et al. discloses the invention substantially as claimed, including: guiding a portion of a controlled flow of hot air (bleed air) from a hot air source (compressor section of turbine engine 14) through an air conditioning unit (air cycle cooling circuit 60 – Fig. 1), wherein a portion is guided past the air conditioning unit (60) into the aircraft cabin (12) via bleed air line (56), characterized in that in the event of a failure of the air conditioning unit (60) the hot air is guided to the aircraft cabin (12) by bypassing the flow control valve (second outlet 58 of the electrically operated selector valve 50) and the air conditioning unit (60). Refer to Williams et al., Figure 1; column 3, lines 21-30 and 46-67; column 4, lines 1-10; and column 7, lines 1-28.

However, claims 9-10 of this application further discloses that (claim 9) the hot air is mixed with cold ambient air before being guided to the aircraft cabin, wherein (claim 10) the air

fed to the aircraft cabin is set to a desired temperature by a control means that is also employed for normal operation. Williams et al. does not contain these additional limitations.

Stubbendorff et al., although, teaches a method for automatically controlling cabin air temperature in an aircraft wherein hot bleed air (from bleed air delivery sub-system 20) is mixed with cold ambient air (from ambient air inlet sub-system 70) before being directed into the aircraft cabin via secondary ducts (52) and associated duct vents (59), wherein the air fed to the aircraft cabin through ducts vents (56) is set to a desired temperature by a control means (system controller 12, which is operatively connected to secondary duct temperature sensor 58 in mixing region 56) that is employed for both the air conditioning mode (300) and for the heating mode (400) for the purpose of automatically controlling the temperature of the air that is being supplied to the aircraft passenger compartment. See Stubbendorff et al., Figure 2c; column 2, lines 42-49; column 4, lines 53-59; and column 7, lines 9-28. Therefore, when Williams et al. is viewed in light of Stubbendorff et al., it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the aircraft cabin heating process of Williams et al. by mixing the hot bleed air with cold ambient air before delivering the air to the aircraft cabin and by regulating the temperature of the mixed air using a control means that is also used for the normal air conditioning mode, as taught by Stubbendorff et al., in order to automatically control the temperature of the air that is being supplied to the aircraft passenger compartment. Refer to Stubbendorff et al., column 2, lines 42-49.

### ***Conclusion***

26. See attached form PTO-892 for additional pertinent prior art, which was not directly relied upon in this action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick F. O'Reilly III whose telephone number is (571) 272-3424. The examiner can normally be reached on Monday through Friday, 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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